

ERRATTA.

2d page, 1st line, read "an ancestry."

2d page, 25th line, for "they are, but that they tend," read "*is, but tends.*"

3d page, 13th line, for "imbecility" read "heredity."

4th page, 17th line, for "in 6" read "and 6."

4th page, 18th line, read "in 6," and "and 8."

4th page, 33d line, for "whose" read "their."

4th page, 36th line, for "Salpêtrière" read "Salpêtrière."

5th page, 7th line, for "great-grandparents" read "great-grand-mothers."

5th page, 25th line, for "and another" read "the third."

5th page, 29th line, leave out "who was."

8th page, 18th line, leave out "and."

8th page, 25th line, for "mal. Both" read "mal, both."

8th page, 36th line, for "father and mother" read "mother and father."

8th page, 37th line, for "families," read "families; the former always considered peculiar; the latter peculiar, &c."; leave out "and."

8th page, 41st line, leave out.

8th page, 43d line, for "in which are" read "where in"; leave out "where" at end of line.

8th page, 45th line, read "of" for "where."

9th page, 4th line, read "in the work" for "in work."

9th page, 21st line, read "consanguineous" for "contiguneous."

9th page, 38th line, read "were" for "was" and "23" for "twenty-three."

9th page, 42d line, read "29" for "twenty-nine."

11th page, 3d line, read "marts" for "merits" and "bourse" for "source."

11th page, 4th line of poetry, read "grandam's" for "grandma's."



THE INFLUENCE OF HEREDITY ON IDIOCY.¹

By MARTIN W. BARR, M.D.,

Chief Physician, Pennsylvania Training School for Feeble minded Children, Elwyn,
Delaware County, Pa.

THROUGHOUT the history of education and of medicine no point has so engaged the attention of the philosopher and the scientist as the influences of environment and heredity. These influences upon our physical being, repeated through successive generations, resolve themselves into law, a law as unalterable as that of the Medes and Persians—a law founded upon fundamental truths and verified in the experiments of physiological science.

The aim of education and medical science is one, viz., to secure to the individual a sound mind in a sound body, so that all that touches one must find its prototype in the other. In this more than ought else, if one member suffer, all the members suffer with it.

This law of balance and proportion we recognize in the forces of nature, in the applied arts and sciences, and we are quick to note the evil effect of the least deviation from this rule.

In a nature so complex as man—a mechanism so finely ordered—none deny that the same principle is but intensified.

Here, therefore, in natural sequence, the *psychological* follows the *physiological* research, may rather join hands in this effort to restore health to the mind or to prevent degeneration; and, acknowledging the sins of the father transmitted in the *body* to the third and fourth generation, would fain seek in the springs of life itself the influence of heredity upon the mind—the secret and cause of idiocy. Most arrogantly we call ourselves “the heirs of all the ages” in all good gifts, but we are slow to acknowledge the serpent’s trail in our Eden. Our vanity is sensitive, and recoils naturally from the thought of blemish in our own—physical or mental—

¹ Read before the Philadelphia County Medical Society, January 23, 1895.

ancestry, either ignoble or unfortunate. We do not, and we will not, except under protest, receive the law of heredity of ill.

Convinced that it is logical, still we seek proof in statistics. The gathering of statistics under these circumstances is difficult. Parents and friends are loath to accept such evidence, and, actuated by false shame, still more loath to impart information, especially when there is neurotic taint. The physician in many cases, feeling that he is betraying a confidence, keeps no record, and the literature on the subject becomes, therefore, most meagre. Thus, when we begin to sift the matter as we should like, we are frequently unable to verify our conclusions. So in many cases the causes of idiocy remain unexplained, closeted within the secret recesses of nature.

But the field of research, with all its difficulties, is broad and is practically unexplored. Before going into statistics, however, let us consider for a brief space opinions of deep thinkers on this subject.

Mercier says: "The first and most fundamental law of heredity is that *every attribute of the parents tends to be inherited by the offspring*. Inheritance is the law, non-inheritance the exception." You will observe that he does not say they *are*, but that they *tend* to be inherited, and the question therefore resolves itself into this, either the offspring does or does not resemble its ancestors. If the former, then there is an hereditary law; if the latter, there is not.

Strong as this is, we find in Montaigne a stronger thought: "Is it not marvelous that this drop of seed from which we are produced should bear the impression not only of the bodily form, but even of the thoughts and inclinations of our fathers? Where does this drop of water keep this infinite number of forms? and how does it bear these likenesses through a progress so hap-hazard and so irregular that the great-grandson shall resemble the great-grandfather?"

Blandford says: "Two laws of nature are concerned in the production of these phenomena. One is that peculiarities and abnormalities are apt to recur in descendants for many generations; the other, that there is always a tendency to return to the type of health in beings which have sufficient vitality to perpetuate their existence and carry on their race for successive generations."

We do not always produce an idiot from an neurotic family.

Again, one or even more of a family may be insane or idiotic, the others normal, showing the taint concentrated, due possibly to surrounding conditions and temperament of parents at time of conception combined with prenatal influences upon the mother.

Thus every idiotic child bears the mark of some inherited tendency from some ancestor.

I will here cite a case among my own patients, where a male idiot born of imbecile parents possesses the face and form of the mother with the disposition of the father, a type of both physical and moral imbecility.

Neuroses are frequently interchangeable in transmission from generation to generation, and there are two great laws—the reversion to the original healthy and perfect type when the taint is less noticeable in generations until it at last is not found at all; or it becomes more pronounced, and a simple nervous disease may appear in successive generations in the form of a pronounced neurosis.

From Ireland¹ we have the following: “Of all known diseases perhaps idiocy is most frequently propagated by heredity.”

Moreau, of Tours, affirmed that heredity was found in nine-tenths of his cases, but gave no statistics.

According to George Wallington Grabham,² heredity is the chief agent in the production of idiocy. Although in his statistics he collects but 18 per cent., he is convinced that the taint exists in a far greater proportion.

Dr. Shuttleworth, in a recent personal letter, writes: “My opinion is that heredity plays a very important part in the production of idiocy, though we cannot prove the frequency by statistics so completely as the fact is impressed on one’s mind by intercourse year after year with the relations of acknowledged idiots and imbeciles.

“Taking only the friends’ statements, we should be much misled, and for that reason I declined when at the Royal Albert Asylum, to publish each year any table of causes. . . . But as one got to see more of the relatives, one gradually accumulated a considerable body of evidence, and this has been summed up and compared with Dr. Beach’s experience at Darenth.” These observations are as follows: The most frequent

¹ On the Diagnosis and Prognosis of Idiocy and Imbecility, p. 1.

² Remarks on the Origin, Varieties, and Termination of Idiocy.

hereditary factor is phthisis, which is found existing in 28.31 per cent.; inherited mental weakness, 21.38 per cent. (16.47 per cent. family history of insanity, 4.69 per cent. family history of imbecility), whilst in 20 per cent. there was a family history of neurosis.

Fletcher Beach subsequently made some further studies alone at Darenth, and found heredity in 76 per cent. of these cases.

In 1856 the Legislature of Connecticut³ appointed a commission to investigate the cause of idiocy. The questions propounded were as to whether there had been idiocy, insanity, blindness, deafness, epilepsy, or any other defect, mental or physical, in the immediate or collateral family of the idiot.

The commission reported that out of 164 cases it found 70 where heredity was undoubtedly the cause; in 10 cases idiocy in the parents; in 6 in the various relatives; 6 insanity in parents; 8 insanity in relatives; in 8 epilepsy of parents or relatives; in 2 blindness; 1 melancholia in father; 13, dementia following insanity in relatives; and in 16 one or more of the defects mentioned, but not designated.

In the census of 1873, taken at Berne, 55 per cent. of the idiots came from neurotic families.

Dr. Langdon Down,⁴ who has made an interesting series of investigations in 2,000 cases, reports 45 per cent. as caused by various neurotic affections in one or both parents. If the mother were afflicted, the first children born were the sufferers; if the father, the later children.

Haller cites the cases of two imbecile women of noble birth and immense wealth who married, and many of whose descendents for more than a century, even to the fifth generation, were idiots.

Esquirol⁵ reports the case of an idiot woman at the Salpêtrière who bore three idiot children.

Dahl⁶ made careful comparative studies of the ancestry of 169 idiots and 151 insane. In the former he found 84, or about 50 per cent., had insane relations. In the latter there were 58, or about 38 per cent., whose rela-

³ Report of the Commissioners on Idiocy to the General Assembly of Connecticut, 1856, p. 35.

⁴ "Causes of Idiocy and Imbecility," *Brit. Med. Jour.*, 1873.

⁵ Hereditary; Th. Ribot, p. 130.

⁶ Bidrig til Kundskab om de Sindssyge i Norge af Ludvig Dahl, Reservelæge ved Gaustad Sindssygeasy, v. 78.

tives also presented marked symptoms of idiocy and insanity. Of these the parents of 18 insane and 21 idiots, about 12 per cent., also exhibited some mental defect.

Of the idiots there were 2 cases where both parents were mentally tainted, 6 where the father, 4 where the mother, 4 where some or all the grandparents, and 5 where the great-grandparents were afflicted with mental disease.

It will be noticed that the great-grandmothers predominated in transmitting the taint, but Dahl gives no explanation of this.

Dr. James R. Dunlop reports the case of a weak-minded father and mother who had seven imbecile children. He was so much interested in the case that he made a number of careful investigations. (*Vide* genealogical table No. I.) For four generations there has been some evident neurotic taint, but it was not marked in the third. The progenitor was a neurotic, and was married to a fairly intelligent woman. To them were born four children, three males and one female. The female was an imbecile and had a son, in no way peculiar, born out of wedlock, but whose father she subsequently married. She had no other issue.

Of the males, one is reported sane, one feeble-minded, and another eccentric if not imbecile. He married a healthy woman eleven years younger than himself. They had eleven children, seven of whom were imbecile or idiotic. One, Jean, has had an illegitimate daughter who was said to be normal. One, Thomas, a hypochondriac, was said to be peculiar in looks and manner, but not weak-minded. He married a sensible woman, and had an imbecile child. James, sane, but peculiar in manner, irritable, and fretful, had eight children, perfectly healthy.

Fletcher Beach also quotes an interesting case where the pre-disposition can be traced through four generations. (*Vide* genealogical table No. II.)

G. B., aged 15 years, an imbecile, paralyzed on left side. Her great-grandfather was not in full possession of his senses. The grandfather was reserved, and the grandmother excitable and peculiar. The father was a neurotic, ill tempered and morose. The father's two brothers and one sister exhibited no peculiarity, but the oldest children of both brothers exhibited the same peculiarity as the patient (G. B.). The sister's oldest child is also peculiar. From the father springs G. B., whose

GENEALOGICAL TABLE NO. 1.

Male, eccentric. Married an active woman, with no obvious peculiarity.

Issue

Male.
Sane.

Female (Ann).
Uncommon;
slightly weak-
minded; married.

Issue

Male, sane.

Male (John).
Strange-looking and eccentric; rather
weak-minded. Married a sensible, sharp
woman, with no tendency, so far as
known, to neuroses. He died in 1848, aged
71 years, from "old age and debility." She
died in 1860, aged 72, from "disease of
liver."

Issue

Alexander.

Helen.

Sane,
born 1809;
living.

Mary.

Imbecile,
born 1814,
died 1823,
aged 12.

William.

Idiot,
born 1812,
living,
aged 68.

John.

Idiot,
born 1814,
died 1871,
aged 56.

Cause of death
"marasmus."

Robert.

Imbecile,
born 1817,
died 1879,
aged 61.

Cause of death
"debility due
to caries of
foot."

Jan.

Sane,
born 1819,
died 1863.

Cause of death,
"phthisis."

Thomas.

Born 1812,
died 1875,
aged 54.

Cause of death,
"chronic
bronchitis
with nervous
exhaustion."

Ann.

Imbecile,
born 1823,
died 1868,
aged 45.

Cause of
death,
"phthisis."

James.

Born 1827,
living,
married.

Charles.

Imbecile,
born 1832,
died 1830,
aged 4
years.

Eight children
free from
nervous
disease;
one died of
measles;
others alive,
aged from 2 to
18 years.

due to
congenital
hernia."

aged 69 years.
Cause of death,
"peritonitis
due to
congenital
hernia."

aged 12.

aged 68.

aged 56.

aged 61.

aged 44 years.

aged 54.

aged 45.

aged 54.

aged 4 years.

Maggie,
an active,
sharp girl,
who, on grow-
ing to woman-
hood, died also
of "phthisis."

Male.
Imbecile,
at present
aged 18.

GENEALOGICAL TABLE NO. 2.

Patient's great-grandfather not bright.

Patient's grandfather very reserved. = Patient's grandmother excitable and queer.

Patient's father irritable,
excitable, bad-tempered;
formerly intemperate.

Two brothers;
no peculiarity.

One sister; no
peculiarity.

Patient, G. B.,
imbecile, para-
lyzed on left
side.

Eleven brothers and
sisters dying of fits
during teething, and
one living paralyzed
in right arm.

Eldest children
of both bro-
thers affected
in same way as
G. B.

Eldest child
queer and ex-
citable.

GENEALOGICAL TABLE, NO. 3.

Huntington's chorea as far back as can be traced on mother's side.

Maternal grandfather phthisical.
Maternal grandmother choreic.

Paternal grandfather healthy and strong;
longevity remarkable.

Paternal grandmother sturdy and healthy;
longevity remarkable.

Issue

Seven children.

Issue

Three living, extremely nervous, but no chorea;

Nine children, all living, strong and
healthy, including
father.

Children
said to be
normal,
no chorea.

Four dead of chorea, including
mother.

Issue

Male.
Apparently
normal, but
extremely
nervous.

Female.
Apparently
normal, but
extremely
nervous.

Female.
Deaf and
Dumb.

Male.
Imbecile.

Female.
Idiot.

Three children.
Sex and order of
birth unknown
One died of epilep-
sy, one of diarrhoea,
and one was still-
born.

Married, but no trace of
nervousness in children.

eleven brothers and sisters died of spasms during dentition. It will be seen by this that the neurosis running through the family touches the third generation but lightly, and intensifies itself in the fourth.

Two family histories of my own patients (*vide* genealogical table No. III.) are interesting studies in heredity:

A. B., apathetic idiot. Huntingdon's chorea has existed in mother's family for many generations. Maternal grandmother choreic, maternal grandfather phthisical. Of this marriage there were born seven children; the order of birth, ages, and sex unknown, with exception of mother of A. B. Three alive and married, and extremely nervous. Have children said to be normal in every respect. The four deceased children, including mother, died of chorea.

Paternal grandfather and grandmother both strong healthy, and lived to unusual old age. Their issue consisted of nine children, sex, age and order of birth unknown. All healthy.

The mother of A. B. was always delicate, and three days after marriage was attacked by chorea, of which she died after twenty three years. She had eight children, the two oldest—male and female—said to be normal. Both married and have healthy children. Third, female, deaf and dumb; fourth, male, imbecile; fifth, A. B., female, idiot. Three children born after this, of whom nothing is known except that they died in early infancy of epilepsy, diarrhoea, and one was still-born.

H. W., high-grade imbecile, eighth child, first born of twin in a family of fifteen, nine of whom are dead; four from convulsions in infancy, two still-born, one from scarlatina, and two, including patient, of meningitis. Of the six children living, five are said to be normal, and one a shameless harlot, who is practically a paranoiac. Both father and mother came of pronounced neurotic families.

Father peculiar, morose, intemperate, and died in his fifty-first year of apoplexy. His first cousin was an imbecile.

Mother is considered very peculiar.

Howe⁷ tells of three towns situated in close proximity to each other in which are a number of families where both parents and children are imbecile. He tells also where an indigent female idiot living in one town mar-

⁷ "Causes of Idiocy," p. 78.

ried, with the sanction of the town authorities, a male idiot, who was not a pauper, with three idiot children as a result.

Dr. Isaac N. Kerlin, my master in work, in 1880, presented a valuable paper on the "Causation of Idiocy Based upon the Analysis of One Hundred Idiots and Imbeciles." He found 28 per cent. were caused by insanity and feeble-mindedness, and 57 per cent. by various nervous diseases.

In my own experience based on a careful examination into the family history of 1044 idiots, I find 397 families, or 38 per cent., with a history of insanity or imbecility, and 225, or about 21½ per cent., of various neuroses.

There is one point so nearly allied to our subject as to demand at least a passing consideration.

Consanguinity is commonly accounted a fruitful cause of idiocy, but comparative investigation shows, first, children having both mental and physical defects, the offspring of healthy unrelated parents; second, perfectly developed children with no personal peculiarities whatsoever, the issue of contiguous marriages. This would lead us to accept the statement that consanguinity has but little if any influence in the production of idiocy, unless there be some hereditary neurosis.

Heath maintains that if the blood be pure and uncontaminated there will be no bad results from such marriages.

A confirmation of this may be found in the history of the Hebrews, which gives repeated examples of consanguineous marriages where the intermingling of pure blood gives only good results, and idiocy is the exception rather than the rule.

The statistics that I have been able so far to gather run thus: In 1865 the population of Batz, Brittany, numbered 3,300. Five marriages took place between cousins-german, thirty-one between second cousins, and ten between those of third degree.

The issue of the cousins-german was twenty-three children, free from all disease, both mental and physical. The second cousins had 120 children, normal in every respect, and the issue of the cousins of the third degree were twenty-nine children, also perfect. Two women were sterile. But insanity, idiocy, and nervous diseases were unknown in this community.

Dr. Kerlin found but 7 per cent. of his cases examined directly traceable to consanguinity.

In my own examination of 1,044 idiots, I find but 3½ per cent. On the other hand, consanguineous marriages where there is the least neurotic taint must always be marked by deterioration of mental power. Naturally, if the taint exist in both parents, the force is but intensified, and idiots are likely to be produced with peculiarities accentuated. A notable example of this is found in Switzerland, where, among the people secluded from the outer world in mountain fastnesses, intermarriage has been going on for centuries. *Here*, by repeated intermarrying, neuroses are preserved intact and idiocy ripens.

Among my own records I find an interesting case which I present herewith :

J. F., excitable idiot, born of cousins-german, in whose families were marked neuroses. Mother, always delicate, and finally died of phthisis. Father, emotional and silly to the verge of imbecility. The following is an account of their offspring: The family, a large one, numbered eleven in all. Four died in early childhood (diseases unknown), three living, of whom I have no history, and four of whom I have records. First born, female, deaf and dumb; second born, female, epileptic; third born, male, idiot; and the eighth born (patient), idiot.

Frequently idiocy appears as the outward and visible sign of the mental deterioration of a family where intermarriage has been frequent, especially one that has been noted for its intellectual qualities, and, according to Griesinger,* it is a mark of degeneration in a race whose blood has stagnated, as, for example, in the Asylum of L., where many of the proudest names in England are borne by drivelling idiots.

Esquirol says that it is simply impossible to enumerate the idiots in the noble families of France, among whom intermarriage is frequent, and also among the Roman Catholic families of England and Scotland.

We have considered to-night, not possibilities nor chimerical maybes, but grim *facts* gathered through years at much cost and pains, by patient, earnest, thoughtful, philosophic minds. Let us come up from their past with the lamp of experience they have placed in our hands to study the present and verify their conclusions.

What are the signs that tell of this enemy, who shall

* Mental Pathology, p. 349.

come in like a flood? What standard shall we lift up against him? It is said that the pulse of a nation's prosperity is found in its merits—the danger signals are read at its source.

Where shall we judge of the intellectual status of a nation but in its educational centres. Schools, colleges, universities multiply with unprecedented rapidity over a land which has just celebrated its fourth birthday among the centuries of civilization.

Through these corridors, out from these doors, press in mad haste for the arena of life, young men and maidens, warm blood, freighted in many cases so fatally with the miasma from some remote ancestor, often doubled and quadrupled in intensity by consanguineous marriages, waiting but for this unhealthy and artificial atmosphere to develop into abnormal growth.

Do we ask why are the hopes of fond parents so often blighted? What becomes of these fair buds of promise?

Go find the answer in those other schools which are growing apace in our midst, dotting from ocean to ocean our own fair land, while others stretch out appealing hands to us—schools public and private which offer no prizes, nor hope of diplomas, yet which are also multiplying with frightful rapidity in response to the agonized cry of the Rachels weeping for their children, and who will not be comforted, because they are not.

The attention of many medical men is drawn to the influence of intemperance in parents as a cause of idiocy. The statistics, however, prove too meagre and the statements too unreliable for us to base any definite conclusions.

The Connecticut commission found 32.34 per cent. My own experience shows 18.38 per cent.

Langdon Down lays special stress upon the intoxicated state of the father at the time of conception, an opinion advanced years ago by Toussenet,⁹ and verified in one instance in my own practice.

Ludvig Dahl agrees that to the abuse of brandy by the fathers, and also to some extent by the mothers during pregnancy, may be assigned the most important influence in the production of the large number of idiots in Norway.

Upon the influence of phthisis, held by many as an

⁹ "Ou sait que les enfants se ressentent généralement de l'influence passionnelle qui a présidé à leur conception. La plupart des idiots sont des enfants procréés dans l'ivresse bacchique."—*Monde des Oiseaux*, p. 106. Quoted by Ireland, *Idiocy and Imbecility*, p. 27.

important factor, I have not entered, as it is largely embraced in the points already elaborated.

The last example I have to offer, and by far the most appalling on record, is that of the family known as "The Tribe of Ishmael," whose history, traced through a period of forty years, shows descendants of one unclean, neurotic man, multiplying by consanguineous marriages into two hundred and fifty families, numbering some five thousand individuals, whose continuous criminal record has poured over the northwest a flood of imbecility and crime.

Can we, in face of such evidence, refuse to accept inheritance as one of the fundamental laws of life?

The mark of the beast is ever present—the spoor of the wild animal remains—and to-day we trace it not only to the third and fourth generation, but on *ad finitum*. Not only possible, but the result of inevitable law is this hideous picture :

“ That swollen paunch you are doomed to bear,
Your gluttonous grandsire used to wear ;
That tongue, at once so light and dull,
Wagged in your grandma's empty skull ;
That leering of the sensual eye,
Your father, when he came to die,
Left yours alone ; and that cheap flirt,
Your mother gave you from the dirt
The simper which she used upon
So many men ere he was won.

“ Your vanity, and greed, and lust,
Are each your portion from the dust
Of those that died, and from the tomb
Made you what you must needs become.
I do not hold you aught to blame
For sin at second hand, and shame :
Evil could but from evil spring.”